

# **IHS Best Practice Models**

## **Cardiovascular Disease & Diabetes**

### **Why is this important?**

People with diabetes are at 2 to 4 times higher risk for heart disease compared to people without diabetes and they are more likely to die after a first heart attack. Eighty percent of mortality associated with diabetes is cardiovascular in nature. Consider these facts:

- 75 percent of cardiovascular disease (CVD) deaths are related to coronary heart disease;
- 25 percent of CVD deaths are related to peripheral vascular disease;
- The incidence of CVD is increasing in American Indians, possibly because of the increasing prevalence of diabetes in this population;
- CVD is the number one killer of American Indians over 55 years of age;
- People with CVD and diabetes have higher case fatality rates, higher rates of silent heart attacks, and higher rates of mortality before reaching care facilities.

### **What measures are used?**

The Indian Health Diabetes Care and Outcomes Audit measures total cholesterol, low density lipoproteins (LDL), and triglycerides; blood pressure; tobacco use and recommendation or referral for tobacco counseling; use of low-dose aspirin; and baseline ECG.

The Healthy People 2010 objective calls for a 10 percent reduction in cardiovascular deaths in people with diabetes.

### **Should your program focus on reducing risks for cardiovascular disease (CVD)?**

Find out your clinic audit results for CVD risk factors. How do they compare to Indian Health Diabetes Care and Outcomes audit measures? Collect local baseline data to determine which cardiovascular risk factors need improvement in your facility and develop a system to accomplish your goal. The system should include outcomes assessment that will show whether the program is working. The program should provide education and treatment of CVD risk factors and see patients every 2 to 6 weeks at least.

### **What is a systematic approach to CVD risk factor reduction?**

A systematic approach can vary from formalized education programs for patients and providers to elaborate formalized multidisciplinary cardiovascular risk programs. It may include formalized training programs to identify, treat, and prevent these risk factors and to more effectively identify which patients have clinical and subclinical coronary heart disease. The program should promote aggressive treatment of these risk factors:

- **Hypertension (high blood pressure)**

- Goal: JNC VI 130/85, HOT trial 130/80, ALLHAT avoid Alpha blockers, HOPE trial elevated ACE use
- **Tobacco Use**
  - Goal: Complete smoking cessation
  - Formalized smoking cessation programs
  - Behavior modification programs, assessment of smoking status, counseling of smoking prevention, ask program: are you willing to quit?; follow-up procedures
  - Medicines: nicotine patches, wellbutrin, etc.
  - Reference: Smoking and diabetes. Diabetes Care, volume 24, supplement 1, January 2001 Page: S64-S65.
- **Cholesterol**
  - Hdl-c (goals: males > 45 mg/dl / females > 55 mg/dl)
  - Ldl-c (goal < 100 mg/dl)
  - Triglycerides (goal < 200 mg/dl)
  - Supporting studies and references include:
  - ADA 2001 Consensus Statement, January Diabetes Care Supplement)
  - Diabetes Care 2000;23(suppl 1):S57-S60), Diabetes Atherosclerosis Intervention Study Group (presented at XIIth International Symposium on Atherosclerosis; June 27<sup>th</sup>, 2000; Stockholm, Sweden, Steiner G. lipid intervention trials in diabetes (Diabetes Care. 2000;23(suppl 2):B49-B53 other lipid lowering trials)
- **Diabetes (hyperglycemia/hyperinsulinemia)**
  - HBA1C <7% (ADA 2001 Consensus Statement, January Diabetes Care Supplement)
- **Albuminuria (diabetic nephropathy, etc)**
  - Stop/slow the progression
  - Routine screening of urine to detect proteinuria or microalbuminuria (small amounts of protein in the urine)
  - ACE use/ Hypertension control (B.P. <120/70)
  - Protein restriction
  - Reference: Diabetes Care, volume 24, supplement 1, January 2001
- **Obesity**
  - Goal BMI <25
  - Exercise
  - Nutrition
  - Reference: Nutrition recommendations and principles for people with diabetes mellitus (Diabetes Care, volume 24, supplement 1, January 2001; pages s44-s47), AHA dietary guidelines, Revision 2000: a statement for

healthcare professionals from the nutrition committee of the American heart association (Circulation 2000;102:2284-2249)

- **Pharmacy** (Antiplatelet, ACE inhibitors, B-Blockers, Estrogens, etc.)
- **Other risk factors (fibrinogen levels, etc.)**
  - Reference: ADA position statements 2001 (Diabetes Care, volume 24, January 2001), Diabetes and Cardiovascular Disease (Circulation 1999;100:1134-1146)

**Best practice programs in CVD risk factor reduction include:**

- Strong Heart Study;
- Southwest Cardiology Group;
- Claremore Indian Health Cardiovascular Risk Reduction Program;
- Santa Fe Cardiovascular Risk Reduction Program;
- Many formalized diabetes programs throughout Indian Health Systems.

**Lessons learned from such programs show the value of the following:**

- A systematic guide to identification, treatment, and prevention of risk factors is one method in decreasing cardiovascular risk.
- It is difficult to reduce cardiovascular risk factors with a 15-30 minute clinic visit.
- Education programs need to be easy to understand.
- Interventions need to be practical.
- Programs should focus/stress lifestyle modifications along with pharmaceutical interventions.
- Programs should involve a multidisciplinary approach ( nutrition, pharmacy, physical therapy, physician, diabetes programs, etc..).
- Programs should involve aggressive, active, and interested personnel regardless of who they are.
- Programs should use nationally recognized guidelines such as those promulgated by the National Diabetes Education program and the American Diabetes Association, as well as local provider and patient input.

**Suggestions for types of programs:**

- Incorporate into established diabetes care program;
- Provider education;
- A multidisciplinary clinic;
- Community prevention programs (incorporate smoking cessation, nutrition education programs in existing community and school programs);
- Cultural awareness training for providers in the area of cardiovascular risk reduction;

- Use of advocates (train the trainers programs).

### **What level program should you consider?**

- Depending on your needs, as determined by analysis of your patient population and CVD risk factor analysis, you may consider designing a program to be conducted on one of three levels of these best practice models.
- **Basic practice model:** A formalized, systematic, objective-based, community education program focusing on enhancing awareness of cardiovascular risk factors and including the following elements:
  - Use of advocates;
  - Training the trainers (health professionals, people in community, anyone involved in the program) in cultural awareness, clinical guidelines, adult learning methods;
  - Identifying educational objectives/goals and developing a system for education learning outcomes data collection and review (evaluate knowledge, attitudes, and behavior);
  - Education sessions in town hall meetings, schools, community grand rounds, radio stations, WIC programs, work-site programs, head-start programs, etc.;
  - Sharing educational strategies with other programs and groups.
- **Intermediate practice model:** Basic practice education model with critical care plans and health care provider education sessions added. Protocols and established programs added without extra staffing. The intermediate practice model may include the following elements:
  - Critical care plans for providers in the standard clinic setting for the following:
    - Hypertension;
    - Smoking cessation;
    - Dyslipidemia;
    - Obesity;
    - Cardiovascular risk reduction clinics;
    - Staged cardiovascular risk reduction management;
    - Built-in treatment programs, with in-house consensus guidelines that are measured through objective outcomes;
    - Outcomes/ goals and objectives that focus both on educational goals as stated above and clinical goals; and
    - An employee assigned to gather data and statistics on:

- Ldl levels
  - Hdl levels
  - Triglyceride levels
  - HbA1c
  - Blood pressure
  - Number of cardiovascular events
  - Percentage of smoking cessation
  - Proper medication use
  - Weight loss averages.
- **Comprehensive Practice Model:** Multidisciplinary cardiovascular risk reduction clinic model (Living Healthy Clinic, The Health Heart Clinic, Healthy Lifestyles Clinic, etc.) with the following elements:
    - A systematic, coordinated cardiovascular risk reduction clinic, which focuses on the identification and treatment of risk factors in the diabetic population;
    - A multidisciplinary team trained to decrease cardiovascular risk; development of local or national treatment and education guidelines;
    - A developed system for clinic administration, structure, timing, staffing, monies, space, hardware, furniture, equipment, drugs, support staff (secretary), physical therapy, dieticians, CHRs, public health advocates, community involvement, education plan (see above), etc.;
    - A clinic that focuses on cardiovascular risk, similar to diabetes risk;
    - Same objectives and outcomes as stated above for other plans;
    - A case manager focusing on risk reduction and acting as primary care provider and providing referrals to other risk reduction specialists (dietician, pharmacist, physician, etc.).

**Who are your target populations for focusing on cardiovascular risk?**

- Highest risk target groups
- Everyone with diagnosed diabetes;
- Everyone with diagnosed established coronary artery disease;
- Other target risk groups include:
  - Patients with single out of control risk factors
  - Patients with metabolic syndrome.

**What progress/program indicators should you include?**

Suggestions for minimum data elements, progress/program indicators (educational goals and clinical goals) for a cardiovascular risk reduction program are:

- Ldl-c levels;
- Hdl-c levels;
- Triglyceride levels;

- Total cholesterol;
- HbA1c;
- Blood pressure;
- Number of cardiovascular events;
- Percentage of smoking cessation (ratio of past smokers to current smokers; or look at number of never smokers);
- Number of patients given formalized smoking cessation training;
- Proper medication use;
- Weight loss averages;
- BMI;
- Number of patients given formalized exercise prescriptions;
- Number of patients doing a routine exercise program (30 minutes 5 days/week);
- Number of patients on aspirin, when indicated;
- Number of patients on ACE inhibitors, when indicated;
- Number of patients on B-blockers when indicated;
- Knowledge outcomes (patient knowledge gain scores, stages of change);
- Behavior and attitudes outcomes;
- Number of new CABG (providing a new blood supply to the heart) interventions;
- Number of new PCTA (dissolving a clot in the blood supply to the heart) interventions;
- Number of new diagnoses of coronary heart disease (CHD);
- Patient satisfaction outcomes.

All data should be collected at baseline and at the end of the grant study. Data collection times will vary, depending on the risk factor. For example, HbA1c can be measured quarterly, blood pressure may be monitored daily if warranted. It all depends on the outcome measured (possibly have blood pressure log-books).

**What issues should you consider in developing and evaluating your program proposal?**

- Are your program objectives measurable?
- Do you include an adequate description of the measurement process; i.e., how and when to measure the objectives?
- Do you define target populations?
- Are your objectives obtainable within the time frame set by the grant; do you set short- and long-range goals?
- Does your proposed budget reflect your ultimate goals and plans?
- Is your proposal relevant to diabetes care?
- Are your outcome objectives related to the purpose of the program?
- Are the qualifications of your proposed personnel appropriate for reaching your goals/objectives?

- Does your proposal address cultural and social issues within your community?
- Does your proposal outline in detail the systems and organization of how outcomes will be achieved?
- If education programs are included in your proposal, do you outline and describe them?
- Does your proposal have a main contact person (project director)?
- Can the intervention and outcomes be maintained after the grant is completed?

References:

\*\*National Diabetes Data Group. Diabetes in America. 2<sup>nd</sup> ed. NIH: 1995

\*\*Strong Heart Study (good data in our patient population)

\*\* Data from Oklahoma State Health Department and other states

\*\*Many epidemiological studies (Mr. Fit, Helsinki, Framingham, etc.)

\*\*Stroke and Diabetes. By Lewis H. Kuller, MD

\*\*Heart disease and diabetes. Deborah Wingard/Elizabeth Barrett-Conner, MD